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ABSTRACT

Proceedings of the Educational Television Institute include the following topics: the potential of instructional television by Richard Barnes and Mitchel Chetel; the school television production center at Port Jefferson High School in New York State, described by Joseph Thom; Peter Derr's comments on classroom television; applied instructional technology by Ira Perelle; input output problems of educational television by Jeanne Davis; and the future of television for special education by E. Jack Goforth. A conference summary and evaluation are provided. (JD)

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August 22, 23 and 24, 1968

The University of the State of New York / The State Education Department
Bureau for Physically Handicapped Children

Cooperating Agencies: Special Education Instructional Materials Center

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FORWARD

These Proceedings represent a summary of a Special Education Institute which was concerned with the feasibility of utilizing television for instructional purposes. The summary considers the need for tapping various available media, teacher orientation, various by-products of student production, technical considerations, dial access, and the future of television.

Gratitude for the Institute must be directed to the Bureau for Physically Handicapped Children which directed Federal Funds to facilitate its development under "Inservice Training", Title I, Public Law 89-313, and to Dr. Leo Connor, Superintendent of Lexington School, who administered the grant.

It is hoped that the material in the following pages will be of value to all readers. May your contributing efforts to plan improved programs of instruction for children in special schools be fulfilled.

Sarah R. Adams,
Editor

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PROGRAM

August 22

9:30	Registration
10:00	Welcome
10:15	BORN OF ACTION Richard H. Barnes, Director Information, Federal and Research Programs Lexington, Massachusetts
11:15	TV IN THE CLASSROOM REVOLUTION Mitchel Chetel, Instructional Television Coordinator Scarsdale Public Schools Scarsdale, New York
12:00	Lunch
1:30	PORT JEFFERSON'S PRODUCTION CENTER Joseph Thom, Director of Library Services Port Jefferson, New York
3:00	RESOURCES

PROGRAM

August 23

9:30	THE TV SET IN THE CLASSROOM Peter Dirr, Channel 13-TV Utilization Manager
10:30	Coffee
10:50	AMPEX DEMONSTRATIONS Eli Katz
12:00	Lunch
1:30	VTR VIEWINGS St. Mary's School
2:00	TECHNOLOGY, AS IT APPLIES Ira Perelle Chester Electronics
2:45	Coffee
3:00	ETV - THE IN'S AND OUT'S Miss Jeanne Davis, Manager Audiovisual Technology New York Times

PROGRAM

August 24

9:30 TECHNICAL PRICE AND STAFF CONSIDERATIONS
William Humphrey, Consultant
Instructional TV and Media Facilities
N.Y.S. Education Department

10:30 Coffee

10:45 QUESTION PERIOD - PANEL
Mr. Goforth Mr. Chetel
Mr. Humphrey Mr. Perelle

12:00 Luncheon

FUTURE OF TV FOR SPECIAL EDUCATION
E. Jack Goforth

Richard Hehir, Supervisor
Education of Speech & Hearing Handicapped

Maurice D. Olsen, Coordinator
Special Education Instructional Materials Center

Robert G. Haule, Curriculum Media Coordinator
Special Education Instructional Materials Center

Sarah R. Adams, Media Coordinator, Special Schools Services
Special Education Instructional Materials Center

SPEAKERS AT THE ETV INSTITUTE-AUGUST, 1968

Miss Sarah R. Adams, Media Coordinator,
Special Schools Services
SEIMC
800 North Pearl Street
Menands, New York 12204

Mr. Richard Barnes, Director Information Federal & Research Programs
Lexington Schools
Lexington, Massachusetts

Mr. Mitchel Chetel, Instructional Television Coordinato-
Scarsdale Public Schools
Scarsdale, New York

Mr. Peter Dirr, Utilization Manager
Channel 13 TV
304 West 58th Street
New York, New York

Miss Jeanne L. Davis, Manager Audio Visual Technology
The New York Times
Times Square
New York, New York

Mr. E. Jack Goforth, Manager
Audio Visual Devices, Inc.
Box 5335
Knoxville, Tennessee 37918

Mr. Robert G. Haule, Curriculum Media Coordinator
SEIMC
800 North Pearl Street
Menands, New York 12204

Mr. Richard G. Hehir, Supervisor, Education of Speech And Hearing Handicapped
Bureau of Physically Handicapped Children
New York State Education Department
Albany, New York

ETV PARTICIPANTS

PARTICIPANTS

Mr. Edmond D. Cassetti, Media
Mr. Gary Curtis, Assistant Superintendent
American School for the Deaf
West Hartford, Connecticut

Sister Gilmary, Superintendent
Sister Eileen Therese, Media
Catholic Charities
Westbury, New York

Sister Loyola Marie, Superintendent
Sister Stephen Marita, Media
Cleary School for Deaf Children
Lake Ronkonkoma, New York

Mrs. Ruth A. Velleman, Librarian
Human Resources School
Albertson, New York

Sister Eileen Marie, Teacher
Sister M. Audrey, Teacher
Lavelle School for the Blind
New York, New York

Dr. Leo E. Connor, Superintendent
Mr. Gary Sweatman, Media
Lexington School for the Deaf
Jackson Heights, New York

Mr. Melvin W. Luebke, Superintendent
Mill Neck Manor
Lutheran School for the Deaf
Mill Neck, New York

Mr. J. Jay Farman, Superintendent
New York State School for the Deaf
Rome, New York

Mr. Ames Curchin, Chief School Officer
Rochester School for the Deaf
Rochester, New York

SPEAKERS AT THE ETV INSTITUTE-AUGUST, 1968

Mr. William Humphrey, Television Engineer
Bureau of Mass Communications
Division of Educational Communications
Albany, New York

Mr. Maurice D. Olsen, Coordinator
SEIMC
800 North Pearl Street
Menands, New York 12204

Mr. Ira B. Perelle
Chester Electronics
1234 Midland Avenue
Bronxville, New York

Mr. Joseph Thom, Director
Library Service
Port Jefferson Schools
Port Jefferson, New York

Mr. Gene Thomas
English Department
Port Jefferson Schools
Port Jefferson, New York

Mr. Frank Wilson
Ampex Representative
Long Island, New York

ETV PARTICIPANTS

PARTICIPANTS

Sister Agnes Vincent, Superintendent
Sister Francis Solano, Media
Sister Arlene
Sister Ann
St. Francis deSales School for the Deaf
Brooklyn, New York

Miss Barbara Cashier, Media
St. Joseph's School for the Deaf
Bronx, New York

Mr. Kendall Litchfield, Principal
Mr. Ed Rubin, Media
New York School for the Deaf
White Plains, New York

Mr. Joseph R. Piccolino, Media
St. Mary's School for the Deaf
Buffalo, New York

BORN OF ACTION

Richard H. Barnes

Mr. Richard Barnes has been with the Lexington Public Schools for several years. He has also been an instructor at Tufts University Clinic for the diagnoses of learning disabilities. He has also been the Assistant Director of School Services at WQED Educational Television in Pittsburgh. He is also the cooperating author of a book entitled, "Team Teaching in Action", by Bair & Woodward. At present, he is the Director of Information, Federal and Research Programs in the public schools of Lexington, Massachusetts. He is a graduate of State College at Lowell, Massachusetts, and completed his graduate work at Tufts University. He has also been an adjunct member of the faculty of the University of Pittsburgh.

I chose the title, "Born of Action", because of having been immersed in the works of Jean Piaget. In his works he says that intelligence is born of action. I believe that Instructional Television is born of action. The reaction to the knowledge explosion, since Sputnik, and because of the action in visual education, an urgent need for improved programming and in-service education is obvious in all areas, and at all levels for teachers, and for those administrators and curriculum developers who work with teachers. I read an advertisement not long ago which said that ninety percent of all human beings learn best by a combination of hearing and seeing; and if you eliminated the auditory skills they would still learn seventy percent of that material visually, if presented properly. I was quite impressed by that advertisement, if I read it correctly. I think that there is quite a lot of birth of action as a result of Instructional Television. I would like to talk today not just about the title on the front page here which is Educational Television but a special part of ETV. Certainly, Educational Television is specialized, but the very specialized part that I wish to talk about with you is Instructional Television (ITV). I would like to comment on materials for teachers and programming; especially for schools. As you well know, on the national scene Educational Television stations, for the most part, have an affiliation with NET. In ITV we have such agencies as, National Instructional Center in Bloomington, Indiana which is a national distribution center for materials and tapes. In regional set-ups, we have such organs as the Eastern Education Network, which you are very familiar with, Great Plains Instructional Library, etc. At the local level across our country, we have about one hundred thirty educational television stations; some of them are school owned, some of them are community sponsored, similar to the one I was associated with in Pittsburgh.

Today I heard the work, money, utilized, and naturally ETV hasn't had the money to perhaps fulfill the potential, unfortunately. In our case, a school services department, just as an example, for a school year, provided thirty courses to eighty school systems for about $250,000.00. When you think one commercial television program special would probably cost a quarter of a million to half a million dollars for the television special, you can see the bargain that we are getting. If you utilize one course within a school system you can prove that you are getting your money's worth when you consider the teacher's salary, the production costs, etc. So a school system that pays $2,000.00 or more or less to participate in an area educational television station is getting the bargain of a lifetime. You may be acquiring one quarter to a half million dollars of programming for your schools when you consider the salaries of the teachers, etc.

You can prove to any school system that the money, I think, is justified. The community sponsored station that I was associated with meant something special. It meant people who determined the programs going into the schools were the people who should and those are the people in education, director of instruction, media people, curriculum coordinators, classroom teachers, and so forth. Many times, curriculum textbooks, etc. are determined by those who have too little contact with children or sometimes with the profession. Let the people be those who work with children and those associated with the educational profession. I think that this is one of the great strengths of the community sponsored station, such as WQED in Pittsburgh. Not denying that the others have strengths too, but, in this particular case, I want to emphasize my particular bias. We are the people certainly who should determine programs and work in collaboration with ETV stations to determine our particular needs. A school curriculum advisory committee or a program advisory committee made up of educators such as you and I work with an ETV station, local, regional, state or whatever it may be and that station would assist us with broadcasting and other services to provide quality learning experiences. However, in all of this, we have to examine what is our commitment? Are we committed to the concept of Instructional Television as a natural and integral part of the curriculum? If we are not, then we should forget it. If we are, then let us do something dynamic about it. Not say, " it's over there, teacher, to use if you wish to, try your best." This is an artificial situation--a disservice to the profession and most of all a disservice tothe child. We must have a clear commitment as educators for what we are going to do with Instructional Television. We must examine what we want Instructional Television to do for our children. Working with the ETV station, we would be assisted in the preparation of written materials, the broadcasting, and the evaluation of materials. In return we would also assist the station with the evaluation of programming to guide them for their particular needs. I would hope also that the Educational Television station would provide us with Instructional Television utilization assistance, advice, (software) and that's the part I'm interested in, not just the hardware which must be quality, too, but to assist us in evaluation, to assist us with printed materials, to assist us with the latest trends of education. I would like to see the educational television station, a hub, where the schools feed information to and work with a staff of a station, and vice versa to make a quality team in this visual world of ours.

The television teachers who are on the air whether you are producing locally or in collaboration with stations, should certainly be people who are communicators. There are many who may be attractive, but if they can't communicate, they shouldn't be on. Also, we have too much GIGO, a computorized term meaning garbage in-garbage out. It's always crude to say it, but it happens to be very true, many times. Assuming that we are interested in quality learning experiences, we must focus on quality on three different levels-- the classroom teacher, the production of the lessons, and the television teacher. Let us start with the television teacher. I would hope that the classroom teacher who wishes to teach on television is auditioned by a group of educators watching a sample lesson on videotapes, etc. This particular committee then would agree on a particular staff member; hopefully deciding that this teacher is a diagnostician, a facilitator of learning, and not one that gives the image of the guardian of the archives. Not someone who is waiting for an echo to give back an answer. Not someone that gives the child the impression that education is a regurgitation of the facts. This person must be someone who can communicate, someone that is sensitive and stimulates. Working in city schools, I felt that you need definite kinds of identification, special types of teachers that would have all the things that I have mentioned, plus other qualifications, and most likely specialized programs. This, then, is another kind of situation. It all depends on what kind of area you are in, whom you are going to choose, etc. Therefore, the good classroom teacher may not necessarily be a good TV communicator; but usually a good TV communicator is a good classroom teacher. The main thing to remember is communication. I am sure that you have seen many programs with lovely people, and perhaps good classroom teachers; but, if they cannot communicate in the Instructional Television setting then they shouldn't be there. Now I hope you will argue with that, later on. If a teacher is chosen, in our particular instance, her responsibility was to prepare a twenty-five, twenty minute lesson per week. I think that this is a quality control. She had at her fingertips research assistance, two or three artists, a photographer, a scenic designer, a construction crew, production men, engineering staff, clerical assistance, a utilization specialist. If you add these up, the team approximates twenty-four people. Very few public school administrators and teachers understand this quality control since they are not really involved. They do not understand the complexity of the team, the expertise that must be there at the ETV station, and, therefore, we should always seek to disseminate this information to improve their understanding. A team of twenty-four plus the classroom teacher makes for a quality team if utilized correctly. And so I call it the triumvirate of you, the classroom teacher, the television teacher, and the production team; and this is what I would consider a mass team-teaching quality approach in utilizing Instructional Television. What are the other quality controls that are built in? The classroom teacher certainly knows the children she is working with. The TV teacher should also be required to visit the classrooms, to talk with the boys and girls and teachers not from the sense of, "Here comes the star"; but, " I'm here to look and listen, to learn and to understand the audience that sees the materials." The Instructional Television teacher should get out into the field and talk to the kids because they are the ones who are the receivers--they are the ones who know. When we have evaluation sessions, what happens many times? At WQED we computerize evaluation, increasing our feedback from four thousand responses to nearly ten thousand responses in a year. The teacher judgments are very good because their remarks were sensitive; but, yet an evaluation that is lacking, I think, is the child's evaluation. More and more we should be asking children to evaluate programs. What does it say to you as a child? I think that teachers would like this type of feedback and teachers really want to know. I think that another quality control would be having experimental groups, not control groups, but definite experimental groups where we can say, " What has this particular series done for this particular group?" Every child in the town doesn't have to do it. You can spot trends by analysis with a good sampling. The television teacher is a reflection, really, of what you feel is your philosophy in education. I can't talk about filmstrips in television, etc., without really going back to what is essential in utilizing all of the materials in a school system. Teachers are hired in a school system, and they do usually what is expected of them. If the teacher is teaching the fact, only, this is probably what is expected by the schools. If it is a flexible setup, you will probably find that the teachers are rather flexible. Certainly, they have a stable structure plus setups that can be flexible. I feel that you have to believe certain things and it always sounds "flowery" but it happens to be very true. In the teachers' guide that we prepared, you will find statements concerning what we feel a teacher should be--a diagnostician, a facilitator of learning. In teachers' guides, which I have read in many parts of the country, I noticed that the title is " Teaching with Television, Teaching the child through TV." But I would say that the focus should be on learning and on the part that says " Learning with Television." It's learning that counts, and that's where the focus should be. You are the educators concerned with learning, and I believe in order to utilize anything whether you are involved in television, computerized instruction or such that every child is unique, and you who deal with the handicapped know that a good teacher must believe that. Also, that every child is good at something. I've worked with emotionally disturbed children, not for very long, and I certainly wouldn't be hypocritical by coming here and saying that I've worked with the deaf and blind. I have not; I can't comment about that. But I do know in consulting with people in special education and visiting classrooms that I have never found a kid that wasn't good at something, and a person who believes this to me is on his way.

We get out of children what we look for. I certainly believe that learning is a change in behavior. The concept of learning as a change in behavior is a thing that teachers do not necessarily always understand. And, therefore, are waiting for guidance, and Instructional Television can bring this behavioral approach into more classrooms through in-service education. Children learn in so many different ways and at different times and speeds. We have all heard this many times, over and over, but many school systems are not ready to accommodate this although it is getting better. A year in school may mean a child progresses a full year, less than a year, or more than a year; but how many school systems are ready to accommodate this rate concept then? This says something to you as media people. Progress should be evaluated in an individual manner. We all say that we believe this, but what are we doing about it. Learning experience should focus upon the success factor of every child. One of the greatest assets of Instructional Television is its positiveness. How many times have you heard a teacher in television say, " Don't do that" or " Do this?" Of course, she is not in the classroom, I know. But maybe this tells us something. I believe then that education should focus on the success factor of every student. At leading clinics, you may get a junior high school pupil or a high school student in the summertime reading situation that is reading a fourth grade book. However, if you explain to them that you are utilizing these materials for success, they understand. They feel a little bit badly maybe, but they understand. And usually, success takes hold. By focusing upon the success, then we can assist people and help change their behaviors. I think that we have at our fingertips a dynamic and versatile medium with a chance to focus upon success factors. We can do it with books. We can do it with filmstrips and certainly we should be able to do it with Instructional Television. With all of this in mind, I would set all expectations in an individual manner. These comments, too, are all contained in our teachers' guide; as sort of what we feel would be a quality insert for the professional person. Education is not a mere coverage of material predetermined by publishers or others. How many school systems are really willing to take the gamble or how many ETV stations are really providing the flexibility that we need? How many people say, " That's ETV's problem." It isn't at all. It's the the commitment of the school system to provide the flexibility factor. Perhaps integrating a closed circuit television with much flexibility in mind. Certainly a closed circuit television is no threat to TV at all. In fact, I would say that it is an asset. Who knows that every child in your classroom, whether it be three children, one or twenty, is ready on April 15 for Lesson 22 that the ETV station is broadcasting? Everyone says they repeat it many times but I doubt that is a proper learning schedule all the time. We can record it and play it back with permission, but that is not really flexibility. We can record, play back but still we have to diagnose when the child needs it. We have to have the accessibility factor. I will admit our ETV station where we had a schedule, but very few systems had the equipment to play back. At times, they said, " You can't meet our schedule." That was a hard one to fight off. But I think that those who analyze their particular commitment and who would do something about it would get more for the educational dollar which they have invested.

Instructional Television has a great potential because it has the ability, I believe, to put students into a problematic situation and through problematic situations I believe we have intense motivation to solve the problem. Students, therefore, should be trained to look for something in television and not to look at it. If you look at it, it's going to be entirely different, as far as I am concerned. These students that are now involved in problematic situations would then perhaps make generalizations which are testable, and be on a springboard then to a quality experience. Therefore, this medium such as Instructional Television can be utilized in a very personalized and individual manner. It can be used in small groups, large groups, intermediate groups. It can be used as special education classes, etc. if the proper software companies, the hardware, an excellent beginning, is there for every system. A school system should train people. An educational television station perhaps could offer assistance also.

Another level that we focus on is the classroom teacher. Hopefully, she is a diagnostician, a facilitator of learning; a prescriber of instruction for individuals. In-service education through Instructional Television has a lot to offer school systems in these topic areas. Perhaps you are producing programs of your own. I'm afraid that you will have to come to the realization that perhaps the ETV station through network or through individual talent can provide a much better job or series than you could. Perhaps the ETV station also would recognize that there are many things that the school system could do itself--sharing of plays, administrator reports, communications within school systems, etc. And so the team linkup should be there. We should certainly think of utilizing television as a medium to analyze our instruction. I would motivate teachers to utilize it to analyze their instruction. I would encourage pupils to utilize it in many learning situations not only for presentation but for diagnosis of themselves. Children, no matter what level they are on, I feel, by listening to their own reading patterns on an audio recorder can learn a great deal. I feel that the television recorder could add another level to the learning environment. Perhaps someday we might make it to the point of letting children program lessons for Instructional Television. How a child sees seems so entirely different than what we see as adults and teachers. I think that when we move into an area of seeing things through the eyes of the child with Instructional Television, we are going to get more payoff. Maybe we will meet the fulfilled potential. The classroom teacher, I believe, is the most important part of the Instructional

Television team concept because it is make it or break it there. There must be quality controls at ETV as we have stated. There must be quality controls with the television teacher, the classroom teacher, whether it be basic instruction, whatever that means, enrichment, or in-service education. There are many creative ways to utilize Instructional Television. You may turn it off halfway through a program. If the teachable moment is there then that is the time to flick if off. The springboard is there. Then let's get on it. Quality learning experiences perhaps will result. Will the children groan? Yes, but when we show them that we are fair by seeing the remainder at another time, they will not groan. Let's be creative. Let's not always be compelled to go through an entire package lesson at one time. ETV stations are going to experiment, hopefully, with more blackout time where the kids can discuss during lessons. Asking questions implies more than just asking questions. It includes visual inquiry. Look at the beautiful things that we learn from commercials on television. I have seen problems where in the classroom through TV students learn other things than we thought we were teaching them. So visual education, my friends, is a powerful thing. For you who deal with the handicapped, etc., you perhaps have at your fingertips a great potential. I believe that Instructional Television programming as we have it today should reflect a multi-text approach. Some text systems are definitely stronger than others, no doubt. Let us utilize this approach in building programs. Student involvement that we have talked about can also be acquired through manual response, oral response, notetaking, and some evaluation techniques. Let us have students, teachers evaluate and evaluate themselves also.

I think that curriculum guides coming out of TV stations will be more valuable in the future as they utilize more of a behavioral approach. I think that it makes it easier for the classroom teacher if she is going to be a diagnostician. With visible behaviors that can be evaluated, a teacher can provide better instruction for individuals. The more that you give teachers, the more they will do. They are waiting and looking for help. Curriculum guides are for such things.

In conclusion, Instructional Television, I think, is versatile. There are many creative ways to utilize it. CCTV, 2500 MHZ is not a threat. The flexibility factor is a big one, but we can beat it. We can be more involved in the learning process. Someday we may have French lessons from Paris. We could have field trips through South America. We may have team classrooms throughout our country. We will have an in-service educational program that we have never had before. We will have improved education at all levels. It takes someone to do it. We must examine our commitment. I think that we will get there. Instructional Television is a seed and not a package as too many of us educators so often want. As Tennyson wrote, " I am a part of all that I have met." That being the case, classroom teachers who are diagnosticians, facilitators of learning, prescribers for individuals have to be equipped with the proper hardware, the proper software to make sure that each child can say, " I am a part of all that I have met and for meeting that part I am a better person." I hope that we will focus on personalization. My particular bias is Instructional Television has a great role to play and in all of this, it's dynamic and versatile. Let's examine our commitment--for the future is not too far away.

TV In The Classroom Revolution

Mitchel Chetel

Mr. Mitchel Chetel is the Instructional Television Coordinator for the Scarsdale Public Schools, Scarsdale, New York. He is also on the faculty of Hofstra University where he teaches in the summer Instructional Television Workshop for teachers. Mr. Chetel was formerly the Assistant Project Director-Television with the South Oyster Bay Supplementary Education Center in Bethpage, a Title 111 Federal Project.

With the fast changing technological implementation in the field of educational communications, there is a major revolution taking place, and television is contributing a major share to this revolution.

To many people the word revolution has a negative connotation, but if we use the Webster New Collegiate definition, " a sudden radical and complete change," it becomes acceptable in view of the changes which we can observe taking place all around us in our entire way of living and thinking. And if the word, revolution, is applied to education then it almost becomes the responsibility of educators to promote new ideas and bring about change. Some educators are either unaware or unwilling to recognize the fact that our society is rapidly changing; but surely we must recognize this undeniable truth and accept the position of leadership in all growth and change situations.

We have all been exposed to opposition to new ideas and new methods in the field of education, and surely television has not been free of such opposition. There are many who feel that television does not belong in the school program and that it should be considered solely as an entertainment medium. The answer to these critics of educational television is that education can and often does take place in conjunction with entertainment. We know from many different sources of statistics that commercial television has made a tremendous impact on the lives of our children and on adults as well. We have been told that by the time a child graduates from high school he will have spent more time in front of the television than in school. We know that whether we approve of the programming to which our children are exposed on television or whether we object to the kinds of things they learn while watching television, some facts still remain for us to recognize and reckon with: children do watch television and children do learn something from watching television, and commercial agencies are spending millions of dollars to teach and influence children and adults via television.

In spite of all the objections and voiced disapproval, television is here to stay, and with the passing of time it will become a greater part of the educational program. It is too late for the educators to try to keep television out of the schools, just as it is impossible for teachers to try to block out the influences of television programming in the responses of children in the classroom. It is true that there are negative qualities associated with television and that many of the evils of television programming need to be corrected or eliminated, but this does not alter the positive aspects of television and the opportunities and challenges which television presents to the educator for using this very forceful medium as a positive and dynamic educational tool. We should be thinking of television in terms of its positive potential and explore the avenues by which television can be used to improve education to do a better job than we have been able to do in the past by traditional methods.

Marshall McLuhan, who is one of the provocative leaders and teachers in the field of communications, has been warning the teaching profession for some time that they should be looking seriously at the shortcomings in the present teaching approaches and then make better use of the new media which are actually a part of the child's daily life. The new technology, he said,has provided the whole society with free or relatively inexpensive "software":

> " The discrepancy between the riches of the TV feast and the poverty of the school experience is creating great ferment, friction, and psychic violence."
>
> " When children go to school, they are filled with rage at the puny curriculum, the lack of information presented."

Children today have a greater exposure to information than ever before because of television, and because television is such a natural part of their lives they do not even equate their learning via television with education or school; they just simply watch and learn. And more than this, their parents are doing likewise, and the entire family talks about the things they see on television. If the schools are going to remain the educating influence in the growth of children's minds, then they will have to accept the challenges of television and learn to make use of the teaching power of television and make it a part of the school curriculum.

In a newspaper article following the assassination of Senator Robert F. Kennedy, a teacher described her discussion with her fourth grade class and the reactions of the children. The teacher did not have to report the event or review the personalities involved. This was all known to the children. Their discussion related to thought-provoking questions as to why this should have happened, how they felt about such a beastly assassination, what the motive might have been, and the tie-in with the previous assassinations of President Kennedy and Martin Luther King. The teacher credited television coverage for the "tremendous interest and knowledge the children have of the tragedy and how it relates to them."

The ultimate success of educational television and its acceptance as a teaching tool will be determined by the ability of the television educators to develop and produce program material which can do a better teaching job than can be accomplished without television. And secondly, and equally important, the acceptance of television as a medium and the use of television program lessons by the classroom teacher as part of the ongoing teaching in the classroom. In a field as young as educational television, there are still many unresolved questions which the so-called "experts" cannot answer to the satisfaction of teachers, or even to their own satisfaction. There is much experimentation that needs to be done and there is need for review and evaluation of each step along the way. There have been many mistakes made and there will be many more mistakes made before specific methods can be formulated and theories crystallized, but in any new and experimental program there should be a recognition that there will be failures before the positive factors can be separated from the unsuccessful attempts. Perhaps it will become necessary to restructure many parts of our present educational establishment and procedures. The curriculum may need revision in light of changing concepts and new media. We may discover that this is the time to redesign our school buildings, our scheduling, and our very thinking about student-teacher relationships and methods of educating children. Most frightening is the idea that we as teachers may have to change ourselves to accept the revisions in educational philosophy and methods. We may have to relearn our profession and start all over again in order to retain the status of leadership in the learning-teaching process.

Because of the complexity and vast variety of areas which make up the subject of television implementation and the "hardware" of television, it is necessary to limit this discussion to one specific part of the subject so that a responsive audience can be developed and teachers will be able to explore the applications of television to suit their own situations.

The specific topic under exploration here is the portable video tape recorder. It is fairly small and compact and easy to operate after the simple operating procedures are learned. None of the references here should be misconstrued as an expression of preference for a piece of equipment, or the preference of one method of television operation over another. There can be no question but that the large television studio with its elaborate equipment and trained staff can produce quality programs of which the portable video tape unit is incapable. But for what it is able to do successfully and for the simplicity of operation, the portable video tape recorder can be a solution to many of the questions raised in the television controversy.

But now to get down to the specific uses of the portable video tape recorder as it has been used in various situations. A most attractive characteristic of the equipment is that it is relatively inexpensive. For the price of approximately $1,500.00, it is possible for any school system to purchase a video tape recording system and begin to experiment on their own to develop their own programs, learn what applications serve their schools best, and make their own evaluations. The portability of the compact unit makes it possible to transport from building to building, or from classroom to classroom and set up a simulated studio with only a few wire connections. Even the non-technical minded teachers can learn to operate the portable VTR with the same ease with which they operate the audio tape recorder or the motion picture projector. The operation of the camera for program recording is also quite simple, and in many schools the students have been taught to operate the equipment. The same children who can operate the standard AV equipment are able to operate the TV units, and in the elementary schools the skilled cameramen and VTR operators have included 5th and 6th graders.

Since our objectives here are not for quality production but rather for exploration and learning, the emphasis and attention is directed to such questions as: 1. What kinds of experiences do we lack in our classroom program? 2. Which of these experiences can we bring to the classroom through television? 3. How can we develop a presentation that will be effective, interesting, and useful? 4. How do we make a program meaningful to students? 5. How can our students become involved in the preparation of the television lesson? 6. How do we develop a more meaningful learning experience for all of our students?. 7. How do we evaluate our experimentation in terms of greater student learning and interest in learning? 8. Does our TV experimentation justify a greater involvement in television?

In the classroom there are many possibilities for experimentation. Lesson segments can be prepared for the introduction of a topic and for the establishment of the direction for a unit of study. Examples of materials, references, and projects can be suggested. Specific science experiments can demonstrate procedures with close-ups of apparatus. In such applications, it is even possible for the teacher to work with one group of children in the class while another group is viewing the television tape and either learning new subject matter or re-enforcing material which has already been taught by the teacher. Off-the-air programs, which come at an inconvenient time, can be recorded and replayed at more convenient hours, thereby making use of additional source materials to be incorporated into the curriculum. With the storage of such programs, the teacher has a library of additional materials similar to motion picture films. There is the added advantage, moreover, of having the ability to edit the video tape and to revise the lesson content. When it no longer serves a useful educational need, the VT can be completely erased and used for taping other programs.

In some schools the VTR has been used to record the performances of children in the presentation of class reports. Children prepared their reports and recorded their presentations and then played the finished product back to the class. In this way the student can view his own presentation and evaluate it along with the rest of the class. In many situations, the instant playback possibility of the VTR has been used in speech therapy classes and in speech analysis programs, in the drama classes where the actor's delivery and timing could be studied and faults pointed out and corrected. Music teachers have enjoyed using the VTR for recording student progress over a period of time and for showing student performances for self-study and for the promotion of interest in music participation by other children. For beginners, there is no better way of pointing out incorrect finger positions or methods of holding or playing an instrument, than to show them what they are doing wrong and how they can best make the correction. In the area of sports, it is most helpful to be able to videotape a portion of a "play" and play it back instantly so that improvements can be made in the next attempt at the same play. Observation of oneself is a better teaching device than any amount of criticism by others, including a good teacher.

For teachers, too, there are important uses of the video tape recorder. It provides the opportunity for teachers to share ideas and classroom techniques as no other method has ever provided. At present, teachers can only talk about a successful lesson. But here is the opportunity to show the lesson, how it was conducted, and how the students responded to the presentation. In addition, the teacher can use the VTR as a private and personal instrument of self evaluation. Many teachers have enjoyed the opportunity of recording a segment of a lesson before a class and then reviewing that recording in privacy to learn for himself what the lesson looked like and what it sounded like from the position of the students. In many schools, the reviewed lesson is then shared with the responsible school official, and this becomes the method of teacher evaluation. Teachers who have used this method of evaluation have preferred it to the traditional evaluation because it gave them the opportunity to review the lesson and make the final decision of whether or not to use it for official evaluation. Furthermore, when this technique is used, it becomes possible to discuss the videotape with the evaluator and to replay any given section. The recording of segments of teaching presentations has also been used successfully in teacher training programs and in teacher preparation programs.

Some schools have experimented with the video tape recorder for administrative announcements, clerical procedures, and uniform testing instructions. Other schools have tried to extend the facility of the small auditorium by accommodating overflow audiences of students during the school day or adults in evening programs as they watched the simultaneous program presentation in classrooms throughout the school. This can be accomplished by feeding the video tape recording system through the school distribution system and this then becomes a part of the growth pattern of a television application.

The possibilities of television in education are limitless and the suggested uses are by no means the only uses or the best uses of the medium. Each school system must determine with its teachers what their specific needs are and how television can best serve their program. Having made this determination, it is only indicated that teachers be permitted to experiment with the recognition of the possibility of failure in the process, and to discover for themselves what procedures and applications best serve their classroom needs and the needs of their students. Never before have we been in a position to experiment and observe ourselves in the trials, and then to change, correct and accept, or reject what we have done before having to expose ourselves and our errors. The flexibility of the video tape recorder system makes it possible for the *teacher to experiment and learn, to change and grow, and to become a better teacher and serve her students in ways never before possible.*

PORT JEFFERSON'S PRODUCTION CENTER

Joseph M. Thom

Mr. Joseph M. Thom is presently Librarian and Director of School Television Services at Port Jefferson High School. He received his MA from New York University and his MSLS from Columbia University. Librarian and information systems specialist in universities, colleges, and in industry.

Designing and operating the school television system and services of the Port Jefferson High School, which was supported jointly by the Port Jefferson Public School District and The New York State Education Department under Sec. 213, Subdivision 4 of the State Education Law, has been a happy experience from the very beginning. It continues to be a happy experience because of the help and guidance from the State Education Department's Division of Educational Communications, the advice we have had from Channel 13 in New York City, and our consultations with professional television engineers, as well as participation by our faculty and students. Unless television is a full time responsibility, it is foolhardy to consider yourself anything but a novice.

The important first step we took was the seeking of professional help in designing and developing our school television services. We are still seeking professional help so we can take full advantage of the television medium in the school environment.

There is, however, a prerequisite to seeking technical advice-

one must have a philosophical base from which to operate. We at Port Jefferson feel that television is an informative machine. As a medium, television is not unlike the traditional and familiar information media that students, teachers, and librarians have used with competence and satisfaction. Television has the same capabilities as the printed word, recorded sound, and microfilm; that is, the capabilities of recording, storing, and retrieving information and data. Further, the comparatively inexpensive video tape recorder has afforded the general public increased availability of access to recorded video information.

Television really is a library or information services responsibility. While I confess to my professional bias of a librarian, the capabilities and the character to television played a far more important part in developing this viewpoint. I see television with no life by itself; as a librarian the "message is the life-giving element to the medium; the author of the message and its recipient are the elements that give the message meaning." This may sound like an oversimplification of a theory of information. Yet, it also represents a conviction that we at Port Jefferson intend to master the medium, just as we have mastered the book, magazine, microfilm, and other media found in the library and school.

Television is an information handling device that, when used together with traditional instructional media, may afford the student and faculty new levels of meaning and fuller understanding. We envision the television medium in a familiar environment where the student and faculty select, retrieve, reject, and intellectually and electronically manipulate bits of information-from all media sources-and create a new message. We hope that the medium will cultivate the student's capacity to generate and transmit new ideas.

A few years ago, we decided to develop a record and audio tape collection in the high school library. The collection was not unusual. It contained recordings of drama, poetry, essays, short stories, and interviews; popular classical and folk music. We installed recording as well as playback equipment. Students recognized the value of the collection and saw the direct relationship with their class interests and needs. They came to the library and listened to their assigned readings with which they had difficulty in understanding and/or appreciating. We observed that students who rejected "tough" readings in their texts, accepted the electronic audio medium. In fact, we observed that there was an awakened compassion and reasonableness on the part of the students.

Members of the faculty played a less passive role with this medium. They saw the record collection as an instructional instrument. In addition to using the commercially prepared phonograph recordings in the classroom, they requested short portions from any number of phonograph records to be dubbed on audio tape. A single program was created where none had heretofore existed. The new programs were played in the classroom or assigned to be heard in the library. One social studies teacher selected a number of worker and labor folk songs and ballads from the records to be taped into a single program for use in the study of "Labor in the United States." A teacher of English collected English and American ballads for his treatment of ballads as a literary form. The faculty were custom-making recorded programs as an integral part of their classroom presentation. A few members of the faculty have dared more sophisticated techniques by dubbing in their own voices and those of students and using sound-on-sound for special effects.

The creative activities of the faculty did not go unnoticed by the students. Students began to write their "papers" in this medium. They prepared reports on poetry, folk lore, music, and current events, using both the audio and book collection. The electronic audio medium became a personal tool where the student and the teacher manipulated the material in the medium for their own purposes. It was this library experience of the student and faculty using the audio medium that helped direct our attention to the potential of television in the library. In view of our experience, our objective was to reconstitute television to where the common denominator was the individual rather than the mass audience. Unlike educational and commercial television, the instructional television system at Port Jefferson High School was to offer its material sensitive to the individual.

CAPABILITIES OF THE PORT JEFFERSON HIGH SCHOOL'S ITV SYSTEM: I believe that we are operating a television system that is satisfying our philosophical and educational objectives. We receive, record, retrieve, and, on a reasonable demand, playback televised material; full programs and bits of programs. We are increasing our capability to playing five requests for televised material simultaneously. We have the capability of revising, arranging, and editing televised material. We can also mix conventional audio and visual instructional material with televised material.

Under a minimum of supervision, high school students operate the television system. They broadcast recorded programs on a strict schedule. Students with a higher level of training record off-air programs and operate the film-chain. One of our students has been given technical responsibilities. He troubleshoots, wires, replaces fuses, and etc. It seems that each year we are able to find a student whose pursuits and avocation make him a "natural" to carry out technical responsibilities.

All classrooms and office, auditorium, library, and gymnasium are equipped to receive off-air VHF programs and programs originating from the five closed-circuit channels of the high school.

The television system that we selected after long deliberation is a two-cable RF distribution system. Each receiving station has a receptacle with two outlets, off-air VHF and closed circuit television. If a teacher wishes to show a program that is being broadcast by a commercial or educational VHF channel, the antenna lead of the television receiver is inserted into the receptacle marked VHF. If the program originates over the high school facilities, the antenna lead is merely inserted into the receptacle marked ETV-CC. The library carrels are wired to receive only programs broadcast over the closed circuit channels and are used by students and faculty viewing programs from the high school's video tape collection.

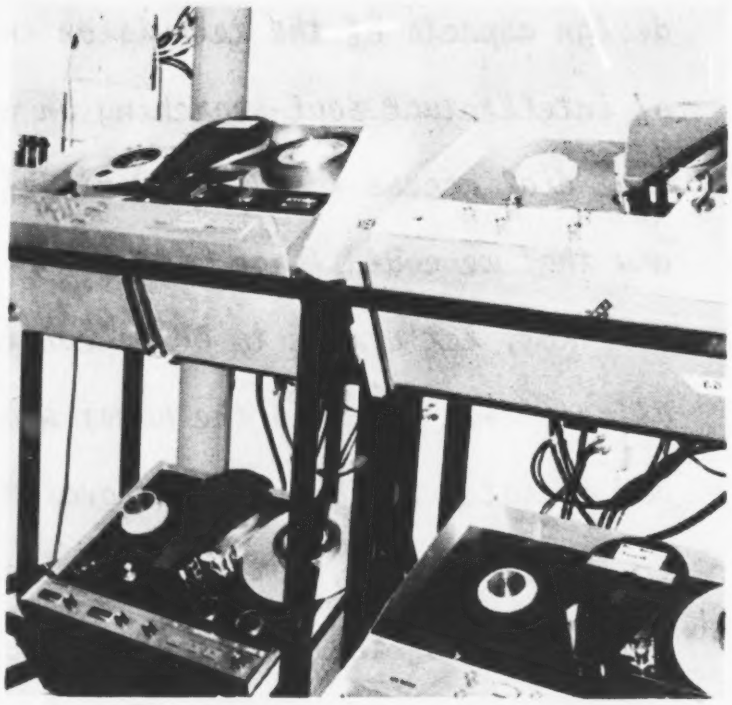
Our decision to install a RF type of television distribution throughout the school year rather than a dial access television system was based on a year's deliberation.

During the first year of operation, the last school year, we had a mixed system; RF to the classrooms (two channels) and two direct video and audio circuits to the library carrels. There are advantages to dial access over RF television. First, the quality of reception of the non-modulated dial access is superior to that of RF. Second, there is a greater potential in the number of simultaneous broadcasts that can be made and received through dial access. Third, and probably the most important, the capability that dial access has of remote operation-where the viewer calls and retrieves video information or a program readied on a video tape recorder. It was in May (1968) of this year that we had to make a decision. Heavy student use of the library carrel facilities had already compelled us to add two receiver-monitors, totaling four stations in the library. It was time that we added additional channels to the library, or additional circuits.

We could not justify expanding the library television service through dial access or through additional non-modulated circuits. Both these approaches to meeting increasing demands for television programs were too costly; more costly than expanding the RF television cable and increasing the number of channels available to the whole system. Obviously cost played its part in our decision. We found, however, that the advantages of dial access were not as influential as they first seemed. It was after long consultations-an educational process-with technically qualified non-vendor people from the Education Department's Division of Educational Communications, with those in the production and design aspects of the television industry and after quite a bit of intellectual soul-searching on my part that I became convinced that dial access for us at Port Jefferson High School was a luxury that we could forgo.

Now, let's turn to RF television reception. It is the type of reception found in the home; same nomenclature, terminology, and operation. The institutional RF television receiver used in the school are, for all practical purposes, home receivers. The quality of the picture reception on the school's RF television system is probably even better than home reception. The potential in the number of simultaneous broadcasts of dial access over RF was proven to be unimportant to our needs. What are the chances of requiring more than five programs at any one time? If the demand for more than five simultaneous broadcasts arose, up to seven additional channels could be added to the RF distribution system. Even, the advantage of remote operation with dial access is minimized by efficient use of student help in the operation of the high school's television services.

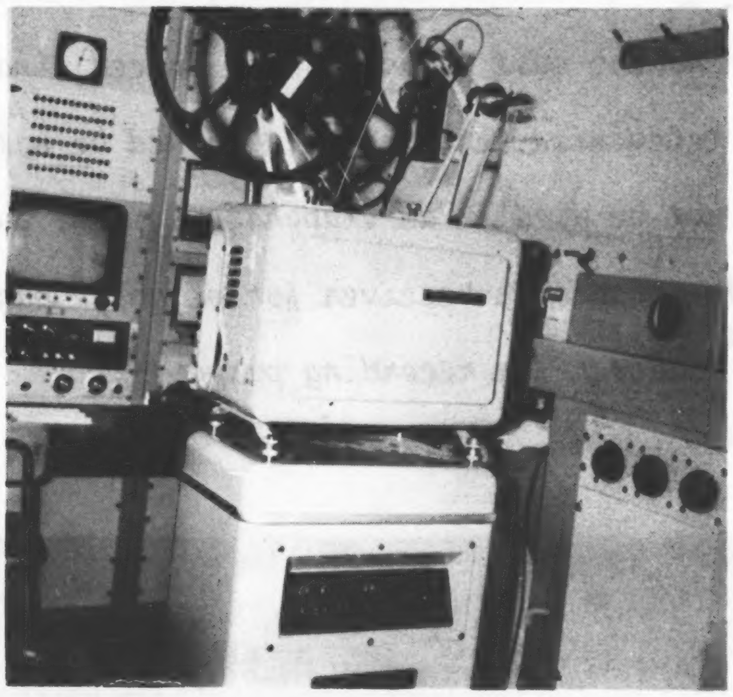
BROADCAST EQUIPMENT: At the present time, we are equipped to broadcast video taped programs, motion picture and slide filmed programs, and live programs. We do not yet own a television camera. By far, the greatest number of our programs are video taped broadcasts. Therefore, video tape recorder is the backbone of our operation. Except for full length motion picture films, all sources are converted to the video tape. We use one inch helican scan Ampex VT recorders, models 5000,6000, and 7000. Our experience with these recorders has been rather good, having been heavily used about six hours per school day.



Stand-by equipment is very important to efficient operation and good relations with students and faculty. In selecting video tape recorders, ease of operation, simplicity, and how well the recorder will stand abuse must be taken into consideration. The vendor from whom the video tape recorder is purchased is very important to a stable operation. The vendor must be able to make maintenance calls within twenty-hours. He must have an ample supply of spare parts, such as video heads, belts, and electronic boards.

The Ampex video tape recorders that are used in the Port Jefferson High School's television system are not commercial broadcast quality. They are best described as home-model recorders. The Ampex recorders were chosen because of our dependence on the New York State Education Department's video tape collection. It was not an unhappy choice. The recorders proved themselves reliable. We consider the Education Department's video tape collection as the most valuable and, indeed, indispensable element in our television services. It should be noted that these recorders need not be used in an elaborate system, but may be used with an ordinary television receiver for playback purposes and with a monitor receiver for recording purposes.

The next most used item of equipment is the film and slide chain. The various components of the film/slide chain complete a sub-system that converts film and sound into a television signal that is either distributed through the RF distribution system or recorded.



A very important piece of equipment to our operation is the audio video switcher. While it does not originate a broadcast or add anything of quality to the program, it is, for us at Port Jefferson, the heart of the operation. It is the switcher that has afforded us the capability of manipulating information in the medium. The switcher gives us the capability to select any one of twelve program sources and direct them into any of the five closed circuit channels. By depressing a button, the student operator directs a program from any one of the recorders and film chain for transmission over the closed circuit channels. It is also used to record, and re-record taped programs, films, and live camera programs.

TELEVISION LIBRARY COLLECTION:

The greatest and most sustained effort goes into maintaining the high school library's video collection. Our efforts are directed to quality as well as quantity and techniques of retrieval. The collection of video material is an integral part of the library services of the school, and in many respects an extension of the printed word. The television collection contains over one hundred hours of video-taped programs, part of which are video-taped programs supplied by the New York State Education Department's Bureau of Educational Communications and in-house produced programs. The collection also includes material in any medium that is convertable to television, such as films, filmstrips, phonograph recordings, photographs, slides, etc. Off-air programs that have been recorded and are in the collection include presidential messages and speeches by outstanding personalities, for example, President Johnson's address of March 31st, 1968, in which he stated a change in U.S. - Vietnam policy and declared his decision not to run for President and Dr. Martin Luther King's last speech before his assassination. A second group of off-air recorded programs that have become important to the high school's television services are for the purpose of 'delayed broadcasts'.

The New York State Education Department's video tape collection is our major source of recorded programs. The Education Department's programs have enabled us to initiate course offerings in Advance Placement, American History, and Calculus. With a relatively small high school student population, it would not have been feasible to offer those courses. The Education Department's collection together with our own television facilities have enabled the Port Jefferson High School to meet the growing demand for increased course offerings. The television services and the availability of programs will enable us to continue in this direction with new offerings in Advanced Placement Biology and English literature. In due course, we hope to institute remedial programs in reading and music via the television medium. In addition to the two advanced placement series, the Department of Education has made available to us video taped programs in the arts, literature, mathematics, science, and teacher education.

EDUCATIONAL TELEVISION: Channel 13, WNDT of New York, is another valuable source of television programs. We consider Channel 13 as an extension of the Port Jefferson High School's television library collection. The Port Jefferson Public School District is a subscriber to the Channel 13 school television services. Within the school day, the teacher's schedule and the educational television schedule rarely coincide. Our capabilities to record and rebroadcast programs over the high school's closed circuit television channels offer the teacher the ability to become more involved with the educational television programs and to make the programs more relevant to the class presentations. The teacher has an opportunity to preview a Channel 13 program, and with the help of Channel 13 Teacher's Manual, is able to "control" the program. The "control" over the program or the character and extent of teacher involvement with the television program is best revealed in the use that some English teachers have made of a twenty minute exerpt of a four hour series on Macbeth. As an example, one twenty minute module contains a discussion by actors and director on Shakespeare's WITCHES. The module offered the student a new level of understanding. The teachers, therefore, feel themselves active participants within the context of the television program. The ability of the teacher and student to retrieve and manipulate televised material is a fulfillment of a basic objective of the program at Port Jefferson. The video material is analyzed and cataloged, enabling faculty and students to select material and to create their own presentations or modules. Students are producing television modules to fulfill class assignments. Teachers are producing television modules for enrichment.

Student participation and participation of the faculty, as well as the heavy demand on the facilities, have helped us plan for the future. We feel that we can offer the students a broader and more enriched educational program with a combination of instructional television and traditional media. After one year of experience with our brand of instructional television, we are still enthusiastic with the potentials. We believe that the medium as it is being developed at Port Jefferson improves the effectiveness of instruction and involves the student more intimately with learning materials.

THE TV SET IN THE CLASSROOM

Peter Dirr

Mr. Peter J. Dirr, formerly Utilization Coordinator, Channel 13, WNDT, New York City, is presently Manager, Educational Recordings Library, State University of New York. He was also ETV Coordinator, Fordham University and Instructor of Education, Manhattanville College. Received his BA degree from St. Joseph's Seminary and College; MA, Fairfield University. Studying for Ph.D., New York University. Also studied Instructional TV at Fordham University and Studio Production, RCA Institute.

Good teaching principles apply to all situations. In some instances, however, they must be adapted to accommodate unusual circumstances. Such is the case of using broadcast instructional television to teach the deaf.

The television medium is one of the strongest allies the teacher has at his disposal. It can:

1. Spread quality teaching
2. Bring new courses to the classroom
3. Enrich courses already being offered
4. Stimulate student interest
5. Transport the students to inaccessible places
6. Improve the student's note taking ability
7. Provide in-service training for teachers
8. Involve the parents in the child's schoolwork

In order for any teacher to use television in his classroom, certain preparatory steps must be taken: (1) The teacher must familiarize himself with the programs and teacher materials; (2)

He must motivate the students and prepare them to think about the topic to be discussed; (3) He must actively participate with his students in viewing the program; (4) He must follow up the program with appropriate classroom activities designed to take the information presented over this mass medium and adapt it to the individual needs of his students.

These procedures remain the same in classes of deaf students, but take on a new dimension. In familiarizing himself with the program and materials, the teacher of the deaf should (1) thoroughly digest the Teacher Manual material and (2) preview each program. (Most programs are broadcast 2 or 3 times each week. Therefore, the first broadcast can serve as a teacher preview.) This gives the classroom teacher the confidence of knowing what the TV teacher will present and how he will present it. It will also give the classroom teacher the ability to function as a true team teacher with the television teacher. Finally, previewing the program will provide the classroom teacher with the added flexibility of interpreting the program (through sign language or finger spelling) while the student views it if he so desires.

While viewing the program with his students, the teacher of the deaf can capitalize on television's visual capacity. He relies heavily on the TV visuals. When there are strong audio sections in the lesson, he has the flexibility of interpreting those portions. Most of all, during this time, he is keenly aware of his students' expressions as indicators of his need to intervene with additional information.

For post-telecast activities, the teacher of the deaf has a wealth of materials at his disposal. The large libraries of captioned films and filmstrips available to him often provide excellent follow-up activities to language arts and social studies lessons. Live experiments can be conducted after a science lesson. Mathematical problems used in the TV lesson can be put on overhead transparencies for immediate reinforcement. Portions of the audio track can be recorded for use with headsets for those students with partial hearing. A special area in the classroom library can be set aside and equipped with other printed and non-printed sources of information on the topic covered during the TV lesson.

Many schools for the deaf (especially through their regional centers for instructional materials) are obtaining closed circuit television (CCTV) equipment that will enable them to experiment with various means of physically modifying broadcast programs by adding captioning to the bottom of the videotapes or finger spelling in one corner of the screen. This combination of broadcast television and local modification holds the greatest promise in the field of television for the deaf.

I have been very impressed by the imagination and creativity of the teachers of the deaf with whom I have had contact over the past year. Many teachers are making good use of television in their classrooms. Some are using the raw materials as broadcast over the air. Others are using these materials after they have been adapted by captioning or split screen finger spelling.

At this time the great need is for an exchange of information in the field. Cross fertilization will contribute greatly to each project. There is a great need for teachers to know how other teachers are using television in their classrooms. There is a great need for schools to know how other schools are adapting the TV medium to meet their specific requirements. There is a great need for regional centers to know what other regional centers are doing to encourage and coordinate experimentation with the adaptations of broadcast TV.

I would urge each regional center to initiate a monthly newsletter for its member schools. I would urge each school to submit one page of descriptive material to the regional center each month. And, finally, I would urge the regional centers to exchange these newsletters among themselves so that they approach a national exchange of information. In this way, teachers from all over the country will be aware of one another's ideas and efforts.

TECHNOLOGY AS IT APPLIES

Ira B. Perelle

Mr. Ira B. Perelle is presently New York City District Manager for Chester Electronics Corporation, Bronxville, New York. As a physics major, he studied at the University of Texas, RCA Institute, and Iona College.

I would like to speak more about a special problem. Assume you go out Monday and purchase video cameras and video tape recorders; do a lot of very creative work with video tapes, and go to Albany and obtain all the New York State video tapes, and purchase several commercial tapes. What do you do with them? You can put your students in a classroom and, in lock step, show the video tapes. If anyone misses a tape, he has missed it; or you can have make-up periods for students who have missed the tapes. The result will be a lot of people doing nothing but operating video tape recorders and changing video tapes.

There is a better way for you to handle the problem of disseminating video information, and incidentally, disseminating audio information, from audio tapes, at the same time: use a dial access information retrieval system. I don't know how many of you are familiar with the dial access systems so I'll describe a basic dial access system. The dial access system is almost identical to a telephone system. Dial access "positions" can be in study carrels, libraries, study halls, or classrooms. The system consists basically of a selector dial which is identical to telephone dial; a receiving unit, which, in a video system, is a video monitor and headset; a small or large video projection unit; or, in the case of an audio retrieval system, includes headsets. It also consists of a program storage bank somewhere for video tape recorders, audio tape recorders, and other program sources. I say "somewhere" because the program storage bank does not necessarily have to be in the same building as the dial access positions. There are installations where the program storage bank is in another building, possibly miles away. The student sits at a study carrel; he knows the program he is assigned to view or review; he dials the number of that program. From that moment on, the entire retrieval process is automatic.

At the program storage bank the recorder, either video or audio, will start, and the switching circuits will direct the program to the student. The recorder will play for the length of the program; it will stop automatically at the end of the program; it will rewind and if the student is still dialed into that program, it will replay. If the student has "dialed out" - disconnected himself from that program- it will stop and await the next command. If more than one student wants to listen to the program, they sit in a two student study carrel or they can sit in two different study carrels or three or a dozen. As many students as dial a program will receive that program. Once the tape is put into the storage bank, no one has to be in attendance to play a tape for students. In the classroom, if you have large screen video monitors or if you have video projection units in a large group instruction area, the instructor just dials the program. If the teacher wants her class to view a short program twice, she does not have to worry about rewinding the tape, stopping and rethreading, and all the other technical manipulations concerned with operating the video tape recorder. She just dials the program and receives it. If she wants her class to view it again, she does nothing. The tape automatically rewinds and automatically replays until the end of its normal cycle. As you can see, a dial access system frees a great many people. Some teachers are afraid of video tape recorders, audio tape recorders, or anything technical. Dial access systems eliminate their involvement with technology. Everyone knows how to dial a telephone: therefore, everyone knows how to dial a dial access system.

When in use, the audio levels can be well set at different points for different operations. If you are working with children who are partially deaf, the levels can be increased tremendously without affecting the system. They can be set at individual levels for individual headphones also, and the headphones can be set at individual levels for each side. This flexibility will solve a lot of problems that exist in some areas. In the classroom, the material is normally broadcast over a loudspeaker but again, in the classroom, it can be broadcast over a series of headphones, if this is what your requirements call for.

Manufacturers are not as close to special education problems as you are. Special requirements, therefore, should be worked out by people like yourselves. Manufacturers normally are very happy to cooperate on these special problems, but do not know what the special problems are unless they are told. If you believe a situation exists that can be solved by Chester Electronic Laboratories, I know that they would be pleased to speak with you. If something already exists in the technological area that would fill your requirements, or if something can be slightly modified to fill your requirements, a manufacturer would certainly make it available to you. Dial access systems, of course, do not need any modification to utilize as your method of dissemination.

By not involving students in the technology of retrieval, there is a great saving in maintenance. If you have material to distribute to children or older students, and if they are going to operate the video tape recorders themselves, your maintenance costs will be sizeable, not because of deliberate misuse of the equipment, but just because people will be handling the equipment. In a dial retrieval system, the maintenance factor is very low, practically non-existant because the system is designed for non-attended operation and operates automatically.

When video programs are distributed, the video can be either black or white or color. Most systems today distribute in black and white. There are a few installations where a dial access video system has been installed for color distribution. One color system presently operating is Millersville State College, Millersville, Penna. There are 50 dial access positions, 30 of which use color monitors. The system has been in operation since the summer of 1968 and is available for inspection as are several other systems in this area.

If you have any particular questions or problems about dial access systems, I will be pleased to answer them.

QUESTION: Where do the programs come from?

ANSWER: A dial access system is only a method of disseminating information. Anything that can be recorded on tapes, either video or audio, can be disseminated. When distributing video information, the program does not necessarily have to be taped, for example, both motion picture projectors and live programs can be dialed. The video dial system will allow you to dial any program source which is a video program source, including video "tuners" for dialing TV programs "off-the-air." Some schools use the dial access system to assist students in science courses; for example, a continuing experiment in biology. A video camera is focused on the experiment, and from anyplace in the school a student can sit at a study carrel and dial the number of that camera to observe the current state of the experiment. This can also be done from a classroom. If the classroom teacher wants to review the experiment with the class, they do not have to dismiss and reassemble the lab; they just dial the camera in the lab and monitor the experiment right there in the classroom.

QUESTION: What are the approximate costs of a dial access system?

ANSWER: A dial access audio system, which is the simple basic system, with 10 student dial positions, and 16 programs, costs approximately $9,500.00. If you add to that 5 video dial positions and 10 video programs, the cost will increase to about $18,000.00. On the other hand, if you are buying a relatively large system, the cost does not increase progressively. A system with 50 student positions of which 10 are video, 100 audio programs, and 20 video programs, will cost only $80,000.00.

QUESTION: How much maintenance is required?

ANSWER: The heart of the system is a telephone crossbar switch, the same telephone crossbar that is the heart of a telephone switching system. It requires no maintenance unless you are in an extremely dusty environment. The only thing that can happen to a crossbar is dust entering into and affecting the contacts of the switching system. Operating maintenance requires someone to change tapes once a week or whenever required. If you utilize curricula oriented material, someone in the department has to say, "on this day I would like this program run."

There must be someone in charge of the system to whom the department chairman or the teacher can issue program requests and feel relatively confident that on the appointed day, that program will be available on the dial system. The individual in charge of the system also should prepare a program list indicating the number to be dialed to receive a program. The person in charge need not be a technician; placing a tape on a tape recorder is not a highly technical job. At the Byram Hills High School, on Route 22, Armonk, New York, a dial access audio system with 40 dial positions and 48 available programs has been installed and is maintained entirely by a sophomore in the high school. He changes all tapes, performs all the semi-technical tasks including cleaning the heads of tape players once a week.

QUESTION: Can several schools use one dial access system?

ANSWER: Yes, this can be done. It can be done over leased telephone lines or privately installed lines between various buildings. In Abington, Pennsylvania, which is just outside of Philadelphia, we have a dial system installed in 5 schools; 2 high schools, and 3 junior high schools. All the equipment is in one building. There are leased telephone lines between the main system and the other buildings and all the students dial their programs which are transmitted from the central building. If you have an isolated dial position, such as a student calling from home for a dial access program, this can be done over a regular telephone. You do not need leased lines for that.

QUESTION: How many video tape recorders are in a system?

ANSWER: One for each program that you may want available simultaneously. If you want to start modestly without a large budget, you can purchase a video tape recorder and a serial access device which allows you to dial several segments of the video tape. On a one hour tape 4 fifteen minute programs or 6 ten minute programs may be dial selected but, of course, only one at a time. Then, of course, you can build up from there. One of the advantages of a dial access system is that you are not dead-ended at any point. If you install a very small system, even an audio system with only 5 study carrels and a limited number of programs, you can always expand it or expand to video retrieval. It is like a telephone system in that respect.

QUESTION: How can films and slides be used with a dial access system?

ANSWER: By adding a film chain and a slide chain with auto-projectors, the slide chain operates in conjunction with an audio tape recorder for narrative and slide change cues. At the end of the program, the tape recorder stops and the slide chain reverts to standby position. The automatic 16 mm projector will rewind at the end of its play.

QUESTION: What are the requirements of a dial access program source?

ANSWER: Anything that is capable of all automatic operation can be started with the dial access system. If it is not capable of completely automatic operation, such as automatic rewind, somebody has to rewind it manually.

QUESTION: Can film loop cartridges be used with a dial access system?

ANSWER: Yes, but film loops have their own special problem. Film loops use a different framing arrangement than standard motion picture films, but they are adaptable to video film chains.

QUESTION: Are there any dial access systems which allow students to "call-in" from their home telephone?

ANSWER: There is only one that I know of that is completely installed. This is not a very expensive addition to the system, but it is an addition and most systems start off relatively small.

QUESTION: Who can call into the system for a program?

ANSWER: Once you have a telephone trunk line available, if anybody outside of the school learns the number of that trunk, they can call in.

THANK YOU FOR YOUR TIME THIS AFTERNOON. PLEASE LET ME KNOW IF I MAY PROVIDE ANY ADDITIONAL INFORMATION.

THE IN'S AND OUT'S OF TV

Miss Jeanne Davis

Miss Jeanne Davis was former upper elementary grades teacher, Yorktown Heights, Exchange teacher. After being in Yorktown as Director of TV, she joined the State Education Department as Associate in TV and recently was asked to accept the position as Manager of AV Technology, New York Times.

When I first met Sally, I would talk about nothing but TV as being the answer. Now I am in the audio visual field; TV is only one part of that. I promise today to speak only about TV.

Robert Benchly once looked at a very beautiful bridge, and he was sure that he could build a bridge just like it. He had no doubts that he could figure out how to build the bridge if only he knew the first step. Now I think that this is a very good analogy for Educational TV. None of us really knows what the first step is, and we are going around pouring concrete all over the place and never really figuring out how to start construction.

Government and industry aren't really helping because they are giving you all the concrete and other materials while saying "Go ahead and build your own bridge." So everybody is building them. It seems to me, as I travel about, that everyone keeps making the same mistakes--building their bridges which are collapsing and then trying to hide the pieces.

When I chose the topic of "The In's and Out's of TV," I really was thinking about the kinds of things that children can do with television at the local production level. School people often don't have much opportunity to think about the creative part of TV, and it's a great kind of creative thing once you are aware of the basic elements.

Let's talk about what a child might do with a violin. Now if a child picked up the violin he had never before seen, he might take the bow and try to figure out how to hold it. When he discovers the strings, he might try different rhythms. As he is doing this, he is learning a lot about the instrument. He may never be proficient, but it has been a learning experience. I think this is very important when we talk about the idea of local TV production. What would you do if you have a mini-studio? What could the children do that would be a learning experience for them? This is what I call the "In's" of TV being more important than perhaps what comes out--or the end result. I call what a child does with this thing a process objective because the process of doing becomes the first priority. I would like to give you a couple of examples to show how the input is the most important element. In a Westchester elementary school, the children are running their little television studio. The interesting part of this experiment is that the kids plan their own programs, act in their own programs, and completely control their own programs.

They have eleven or twelve ladies who put in three hours a week as "volunteer mommies" for this studio. Students are in the control room at the console and they are really running the thing completely by themselves. They go through the New York Times every morning and do their little "Today Show" which is distributed through the whole school. They take turns at various jobs. The student director posts the production sheet with the names of each child and his specific responsibilities for a given production. It's amazing, and if you have a chance, I really urge that you do go to see it. An overhead projector on a rear screen is used as a "do-it-yourself" special effect. This is not an expensive studio. They do a lot of quiz shows including a game they call "Spellnic." There was an interesting story told to us about a little boy, actually he was a very big boy for his age, and had a great many psychological problems. He was only about eleven, but he had attempted to commit suicide. They put him in this kind of situation as possible therapy. He never would get in front of the camera and he would do very little other than perhaps hold cue cards or be a floor manager. He wouldn't do anything where he stood out in any way. Finally, after many months in the studio, he volunteered for a "spot" appearance on a program. The experience in this kind of situation where there was constant social interaction forced the children to rely on one another. They were totally dependent on each other in order to make this thing go off. Everybody had to do his job, and this boy really made tremendous social gain as a result.

Now there is another aspect to the involvement of students. When I was in Yorktown Heights, we had developed a television curriculum for high school students. Our course was particularly popular with those about whom the Guidance Department used to throw up their hands in despair. We found that many of the boys really were most creative when it came to studio techniques and crew organization (sometimes they organized the other kids strictly by fear but nevertheless they produced results.) Many students worked voluntarily for hours after school, so we decided to give them local credit for their participation. We had some students as typists, and others as floor crew, production crew, and writers of programs. We had a social studies class that learned about the French Revolution by doing a mod version of it which was unbelievable. They actually made a guillotine out of cardboard, and the teacher had to take the part of the poor soul who was being beheaded. Needless to say, it was a tremendous hit. Teachers very often can cooperate in these programs. Again, when I was in Yorktown, a first grade class did a television program and a puppet show. Puppets are wonderful for television, you can do anything with them. The magnification of television just lends itself beautifully to that technique. One of these first graders sent me a letter: " I liked the TV studio. I liked the cameras, the lights. They made me hot, and there were lots of wires but I wish I could go again. My mother liked the show." This kind of thing, all the activities, grew out of this one visit to the studio when they did their little puppet show.

You might try utilizing commercials. You can approach this from a public interest standpoint. If you conduct an English class, you can stress the use of propaganda techniques in commercials or you might use them as mini-television productions in themselves. You can obtain advertising scripts quite easily from the agencies. In some of the scripts all that is given are the audio parts and the kids have to figure out what they would do to visualize them. They are thirty seconds to one minute in length and so quite easy to handle. We had some high school students who were in the "low track." We just gave them three or four of these commercials and let them use their heads. The creative result was magnificent! It was a very good experience for them since it gave them some sort of an outline to help them organize their thinking. I still maintain that there is a lot of learning that goes on with that approach. The end product is not always the important part of a learning experience.

But now back to our violin, you say, "that's all very well and good, but here I am and I am an adult and I want to learn how to play the violin you've been talking about." As an adult I would approach it altogether differently from a child. I'd probably use a more scientific method. I am now concerned with the "end product," not the process. To translate this to TV terms, as a teacher what are you going to do if you find yourself with access to a little studio or a camera and a video tape recorder? What are some of the things you can do? First of all I would warn very strongly against local production if you are after a professional product. Those kids who are sitting in the classroom are very sophisticated when it comes to watching TV, and their standards are very, very high. You and I both know school districts involved with local production. The viewing session usually starts off with an apology. It gets to be standard routine to say, " I am sorry that this is not exactly the way we wanted it." It can't be because technically local production just cannot do the job. However, there are specific kinds of things that you might be able to do that aren't done by the commercial people. Ira Perelle talked a little bit about carrels in which students may work independently. This concept is valid whether the children are receiving this program in the classroom, a carrel, or a more sophisticated kind of setting. In a suburb of Chicago, specific programs are accessed through a computer. Eventually this will be available to the home via telephone. Regardless of how the information is received, some of it can be prepared locally. If you do get involved in local production, however, let me give you a couple of warnings. First of all, I would not try to do a full scale television production. I would rather try to create a "visual paragraph", that is, small, completely visual segments. With one camera you can take advantage of existing or prepared visual materials. By using an unseen narrator, you avoid the big talking face on the screen, thus taking full advantage of the visual medium. In the case of schools for the deaf, captions can be utilized.

Television should be able to create a unique learning situation. As an example, let's take an academic area such as social studies, specifically American History, more specifically, "The Revolution." We'll call that the study unit. We are still not up to the program itself. Now, let's decide to narrow that down. We decide there is nothing at hand that can teach exactly what you want to teach, namely, The Events Leading to the Revolution. We'll call that the documentary area. That is the area that you should stay away from in local production, if at all possible. We're talking here of the twenty minute or half hour program which presents an Overview of Events Leading to the Revolution. This is probably available through books and films already. What is it then that should be done locally? The "mini-documentaries", the single concepts? I define "mini-documentaries"as the elements of that original overview, that is, specific events leading to the revolution such as British Economic Restrictions. Perhaps this can be explained adequately in a ten minute tape which your students will have available to them when they seek the information. But let's go a step further and look at the three unfair British Acts: the trade laws, taxation, and the writs of assistance. This is the "single concept" stage, that is, we have broken the elements down to an even simpler form. Perhaps in a three to five minute visual presentation, the information can be completely covered. This type of presentation does not require any kind of expensive sophisticated equipment. Many who come in as volunteer TV teachers soon find out that for every twenty minute program, it takes something like sixteen hours of preparation; then should everything break down, as it sometimes will, well, you know the rest.

Technically, these mini-documentaries and single concepts are relatively easy to do. Most difficult is the writing. It must be succinct, graphic, and able to stand on its own--not dependent on any kind of previous knowledge of the subject on the part of the recipient. The tough part is the organization of thoughts. Fortunately, the teacher is usually able to do this very well. The visualization must be an integral part of the script, so the writer must have the ability to think visually and graphically. Again, this kind of local "production" or "visual paragraphing" performs a unique service to the student and the teacher.

In addition to the use of television in various ways already mentioned, I would like to comment on one of my prejudices which you can accept or reject. I have found very few who are willing to go along with my thinking, but I shall, nevertheless, persevere. I speak now is using television for teacher evaluation. I have to say, I feel compelled to say, that I would be very careful in this area. If you have studied communications at all and you look at TV, you know that TV does certain things very well. First and foremost, it exaggerates. Some innocuous act that would otherwise be inconspicuous becomes quite important, and even, perhaps, distorted. As I give you an example, I guarantee you will respond, "Well this is only an exception. This could only happen one time in a million." But the fact is it did happen with a teacher from a university who works with the deaf and teaches teachers of the deaf. A TV camera was recording an interview with a child. As he stood up, she patted him on the head. When she watched the tape, she was shocked to see that it actually looked as if she hit that boy. At the time it was laughable, for everyone who viewed it knew what the teacher had actually done. As we look back, this isolated incident could have been devastating. I maintain, therefore, that if you are going to utilize TV for evaluation, you must realize that it does exaggerate. Have someone who knows the medium and knows its characteristics there and set up the guidelines so you may focus on the pertinent. Much is done with micro-teaching. That is a completely different concept because there, specific skills are "staged." This has a value of its own. But it is not an attempt to simulate the real thing--putting two cameras in the classroom and recording. Someone is making the decision when to switch from one "scene" to another. It is then that it becomes something other than what exactly is going on in the classroom. Be sure, therefore, to have very, very tight guidelines to establish exactly what it is you are doing. Try watching yourself on TV. You are probably self conscious when you look at yourself and become preoccupied with certain physical characteristics. A simple movement, which is hardly noticed in the real situation, becomes very important when seen on the screen. That's television! If you've ever been on TV, you've been told to walk very slowly since movement is exaggerated. I was told that some airlines used to have a television camera situated so that you could watch your landing. One of the reasons it was finally decided to eliminate it because the wheel hitting the ground with all the smoke going up was really frightening the passengers; the whole thing was exaggerated. This is what the medium does.

To review today's talk, I'll go back to my violin again. Regardless of what your objective--whether you are a child and your aim is to enjoy the process of experimenting with the instrument--or an adult who really wants to play--and so pursue it scientifically until a limited but acceptable level of proficiency is achieved, you do the thing you do best. Although never able to perform as a concert violinist, you are great for square dances. There is a concert violinist someplace else, and you can utilize his talents by attending the performance or buying his records. Why try to simulate that which is already available? Whether you play the violin or direct learning, make a unique contribution by "doing your own thing."

FUTURE OF TV FOR SPECIAL EDUCATION

E. Jack Goforth

Mr. E. Jack Goforth speaks from his experience with the Southern Regional Media Center for the Deaf in Knoxville, Tennessee. He has his own company called Audio Visual Engineering, Incorporated, which develops design, service, installation, and preparation in utilizing technology.

I am a bit apprehensive about speaking to the educators of the deaf. Even though I did work with Doctor Jackson, education is not my field. I am an electronics man and please bear this in mind if I relate to methodology or the use of TV in various methods of teaching the deaf. It is not my intent to suggest that television relates better to one method or another, merely these are presented from experience with educators of the deaf and so forth. Today I will discuss methods of captioning television and make suggestions for the use of TV in deaf education.

After arriving here this morning, I realized that perhaps you would like to hear some of the experiences that we have had in the use of various types of equipment in diverse environments throughout the South. In the silent world, the key to knowledge is the transmission of visual experience to meaningful thought. To the true deaf person, the majority of meaningful experiences must be visual. Television lends itself well to this type of task. There are many ways television can be useful; some are obvious, some obscure. A man came to me only three weeks ago and asked if I could devise a way to amplify finger spelling where an interpreter at point "X" in a room could interpret to adult deaf throughout the entire auditorium, an audience of 400 to 500 people. I told him I would not think this was a great technical problem and could be accomplished without any difficulty, but he said he could not afford all the TV sets. I asked him if he had ever heard of projection TV using rear screen projection, and he said he had not. I informed him it was possible electronically to place the head of the guest speaker and the body and hands of the interpreter on the screen as one man without difficulty and without looking very odd, especially if they both have on a shirt and tie, a good gimmick, but quite effective.

I personally feel that Captioned TV used as environmental language tool in the dormitory of residential schools perhaps offers the greatest potential for TV in education that I have seen. Most of the educators of the deaf with whom I have talked suggest labeling of objects in the home and environment of a young deaf child. I have been in schools where there are signs everywhere; on the walls, steps, and every place you go. We can now apply a technical breakthrough to "environmental labeling"--digital captioning. This would allow us to take open circuit TV and label it. I will give you an example. While we were doing some instruction at the Tennessee School for the Deaf, we took our TV cameras and video taped a truck driving under a large crane. The crane was picking up air conditioning equipment.

Playing this tape back through a special effects generator, it was possible to label "truck", "crane", and "building" and put it in appropriate places on the screen. As the truck moved in, the caption, "truck", followed it as it came across the screen. We didn't attempt to make sentences because our intent was to present this tape to very young children who could not read. We just wanted it as an environmental language tool. If children live in a dormitory, they have several hours of leisure which in many cases are passed watching television. Could not this time be used for constructive environmental language through TV? Mr. Roy Parks of the Arkansas School for the Deaf has started a program using TV in the dormitories with a teacher in the dormitory. I have my reservations about putting a teacher in the dormitories, especially after several hours in the classroom. I think if we attempted to use TV in the way that many colleges and universities have used TV, that is in the instructional sense, that it might backfire, but I believe environmentally that if offers great potential. Technically, the ball is now in your court; it's up to you to develop the programs. Now let's talk about something else.

The simple half inch systems, I feel, offer great advantage, particularly those involving skills. In schools for the deaf, the half inch equipment would probably be superior in flexibility and offers a great advantage over the cost of the one inch equipment. Why go out and put $7,000 to $8,000 in VTR equipment when you can do the same thing for $1,200 with a little less quality in the picture.

An example of such a system is a Concord half inch tape recorder which is the kind of system we were using at the University of Tennessee for micro teaching. Almost any make camera can be used. This unit is a common 250 line system.

While half inch equipment offers advantages in portability and low cost it should be restricted to non-broadcast type programming or classroom uses. At the present state of the art, it is my opinion that only one inch formats such as Ampex, ICV, etc., be considered for "campus" broadcast type systems.

Let's go through a campus system and how we might utilize our TV in a campus school setup with digital captioning. As you can see, in Figure 1, we have several in-put sources in our system. One is a Conrac Receiver or an off-the-air pickup receiver. Conrac happens to make a very high resolution unit. It is used in some cases by television stations to recreate or rebroadcast signals from other television stations and it is merely a high quality television set without a picture tube. We have a film camera with a multiplexer, in the case slides and films, both 16 and 8 mm may be made available through one camera, separate from our two viewfinder production cameras. These go into an audio-visual switcher and effects generator with preview monitors. We have a video tape recorder which would allow us to record off-the-air signals. Let's assume we want to tape the evening news from an NBC affiliate station. We are interested in captioning this for environmental language in dormitories. Taking our Conrac Receiver, we record the entire program, both sound and picture conventionally. The tape is then played back and a caption writer is employed to edit and type captions at the desired language level. The captions are fed to a device which can store these captions until the time we want to use them. Then the video tape and the device containing the captions are fed into another video tape recorder simultaneously and stored. Now we have a full captioned video tape. Obviously, if we are working in a normal residential school for the deaf, we will have students with several reading levels present, so it may be desirable to caption the same video at three different language levels. It is possible to run the same video with different captions on three different channels in the same master antenna system. You have not been to an airport lately without seeing digital captioning on television screens. You might also have noticed that the inforamtion on departing planes was blinking. Wouldn't it be possible in the education of the deaf, if we were trying to point out nouns, verbs, or sentence structure, we could blink the noun or blink the verb or the prepositional phrase? If we were trying to call attention to one object in a picture such as bird in a tree, it would be possible to use this blinking technique to separate the word, "bird", when designing sentences. These are just some of the capabilities of such captioning devices. Several companies offer such devices with many options and features. The A.B. Dick Company has developed the heart of the unit or character generator. Visual Electronics Corporation offers a "data call" unit with the capacity of storing about 1200 lines of information. The entire system, the keyboard, the monitors, and the data call will run somewhere in the vicinity of $10,000. Because a school can caption any existing software such as slides, films, as well as video taped football games or any school activities, it is not necessary to spend great sums of money on creating material to be captioned. I strongly suggest that if you go into this system that you have somebody designated for video programming, one who has no other responsibility than TV. I believe that if we could caption one hour of TV a night, at an appropriate language level, that we would have to improve not only the reading skills and vocabulary but the understanding knowledge of our children in the dormitory.

Let's think for a minute of how we might implement such a system. It could be possible to set up such a program on a regional basis. Wouldn't it be nice if we could have a regional captioning center serving 10 to 12 schools for the deaf with professional production people employed under the direction of a creative educational team? We could supply video tape much as the New York School System here has a video tape library; as such, we could supply so many hours of video tape, captioned video tape, or environmental viewing to each school per day.

Software development is the key to the success of TV in the special education. It is not difficult to get an engineering company to sit down with you and work out a technical problem for you. However, these same engineering companies are not capable of designing an effective software of deaf education. This must be the responsibility of the educator. I think creativity is the key. We had a little seminar on this down in Tennessee and a fellow came up and we were talking about writing software for computer assisted instruction and someone in the group asked what was necessary to make a good computer tape. He named off a a doctorate in English and a doctorate in the field of program desired. We would need a media specialist and seven people total on a doctoral level. If this is what it takes to design software, we are out of luck. It is going to be very impractical. I don't think that it is necessary that we have this level of people from the experience that I have had. We have seen children in the schools for the deaf, and teachers' aids, and very inexperienced people come up with some pretty good programming in the opinion of experienced educators of the deaf. I don't think you are going to have to pay through the nose to get some very good people, neither will you find quality is proportionate to credentials in all cases.

The Regional Captioning Center, which I have proposed, would have as a prime responsibility to produce on video tape several hours of captioned program from selective sources for distribution to schools for the deaf, such as TV documentaries, information programs, common interest sports programs, etc. Perhaps the greatest potential of these centers as I mentioned would be the development of software or programming in an area previously devoid of such. Because we now have the people to do it, programs of special interest only to the deaf could be produced and distributed through these regional captioning centers. In fact, you would almost have a TV network for the hearing handicapped. Ideas, concepts, and news of various schools could be interchanged; this is a big problem in the 12 state regions I am familiar with--dissemination. We have a fellow up here in Virginia who has a tremendous idea and nobody knows about it in Florida. So if South Carolina comes up with a good idea, nobody in Tennessee ever seems to hear about it. The superintendents get together and attend various meetings but the rank and file in many cases don't know what is going on. I think that this is an area that we can improve. The exchange of programs between the students and the schools can be utilized this way. I think potential area is quite good. One cannot overlook the teachers' training possibilities for such a system. The adult deaf in the community can be served by such a system so regional captioning films centers offer great promise in several areas. Tapes prepared by the center and distributed to the various schools would be made available through a common master antenna system at each participating school.

Referring to Figure 1 again, you will notice the primary channel can be selected at the primary dorm by changing the TV set to Channel 3. The program will appear with primary level captions. Channel 5 is designed for intermediate dormitory so their set would be changed to Channel 5 and Channel 7 would be a senior level or upper level. Of course, this could also go in the classroom on any channel because it's merely a matter of selection of the TV set as to which level of captions that you wanted. It might also be pointed out that you would not be limited to Channels 3, 5, and 7 and that you would tune open certain channels with the same unit.

You might also note that we have a storage of captioned tapes, and I would like to mention at this point about the storage of tapes. I think that there is a gross misuse of video tape when we store information that could easily be fitted in the film. From my experience, I have found that the advantage of video tape is that it's immediate. You can play it back immediately, you can dub over it, you can edit it within reason and it's very inexpensive when used in this way. You can take a $42 or $60 tape and tie it up with a presentation like I am making and stick it on a shelf somewhere. I think it's a gross misuse of video tape because you could have done it cheaper and with improved quality by using film. You could have broken it down into single concept films and made it available in parts. So if I were considering video tape, I would sit down and make sure that I am using video tape to its fullest potential and not trying to duplicate something I could do with film.

I would like to talk briefly about a national captioning system, and this is a kind of Rube Goldberg arrangement because of some laws that we have in the Federal Communications Commission. (See Figure 11) The digital bits or character generator can produce audio notes which are used to regenerate this caption or character. It can be stored on audio tape which means it can also be transmitted by radio. Now if I take an FM transmitter that was multiplexed, and we are all familiar with the stereo setup and multiplex in New York, we could rent a subcarrier that duplicated the coverage of the TV station and run captioned digital bits over that subcarrier; these would be picked up with an FM receiver, run into the captioning producing portion of the character generator and combined with a video signal received from the TV station. It's a Rube Goldberg arrangement but it works. We are talking about somewhere in the vicinity of $2,000 and $2,500 for TV receiver so it's rather expensive. If it could be put in mass production, the price could be reduced to the price of a good color TV set and the potential of this would be not only for deaf education but for anyone interested in improving their reading skills or vocabulary. Such a channel could be set up in the New York City area with one TV station and one FM station, offering captioned television to the entire metropolitan area of New York City without difficulty. I want to point out if you are not aware of this, that this is a compatible captioning system. You do not see the captions on the screen of your home TV receiver unless it's adapted for captioning; just as we transmit compatible color, we could transmit compatible digital captioning. We could multiplex the sound carrier of the TV station, and we wouldn't have to use FM, but right now this is against the law. However, I believe that if certain groups were interested, they could get the FCC to weigh the rule for a feasibility study in one practical area---probably open circuit Educational Television Stations. I feel the copyright restrictions would make digital captioning of commercial television very impractical at this time. If there is one thing that would be helpful in the education of the deaf, it would be the lifting of the copyright restrictions; I think this could be done but who's ever made an effort? Has anyone ever talked with caption films about pursuing this? Have any letters been written to caption films people about just using captioned film alone on television? I know the contract with caption films says that you cannot use caption films on television, but define television. Does that mean one camera and one receiver here in this room, or does it mean open circuit or does it mean a campus style system? I cannot see why a film producer would object to the use of his film on a closed circuit television system within a campus for the deaf. Now if you are going to go out and sell or make it available to everyone in the community, that's a horse of a different color.

This brings us to the 2500 megahertz system. This is another method of transmission,and I was asked to comment on this. I feel through my experiences in the South that 2500 megahertz at this time is impractical in the schools for the deaf because it can be done in an easier and less expensive way by coaxal cable which does not require a licensed FCC technician, as 2500 megahertz does.

The success of TV in Special Education, in my opinion, will hinge on several factors. Number one is creative people. We have got to have creativity, and I don't think that we can use television effectively within a school without a TV specialist somewhere. I don't know how long it took to get librarians in schools for the deaf, but a library could operate without a creative librarian---I don't believe your television programs can operate without creativity. You must have full time people to work with television in schools for the deaf before we ever make effective strides.

If television does have something to offer in the education of the deaf, how do we get it, who pays the bills, how do we start? May I suggest we start by seeking the advice of private industries such as television stations, advertising agencies, etc. By seeking this advice we make these people aware of our problems and these people can help not only with advice in their fields, but also can assist in many cases with finding available talent.

Along this same line of cooperating with private industry, we need to make political figures more aware of our needs. I invited a state representative in Tennessee out to the School for the Deaf. On leaving the school he said he had no idea that conditions like this existed or what was involved and so forth, because no one had ever contacted him. He went away convinced that schools for the deaf were getting cheated in the state budget. After all, money is the name of the game. These contacts that you have made with private industry will help you a great deal in this area, too. I think the Caption Films for the Deaf Program, particularly regional media centers, might make a little profit for the various schools for the deaf in the region if they visited the state legislature. We have all seen the movie, " A Time to Sow." I would like to see that shown in the state legislature or senate sometime and see the reaction of some of our political leaders who hold the purse strings.

Deaf really live in a silent world in more ways than one. We have to develop our own concepts for TV and the utilization of media. Too many times we stand in the shadows of public education. I have seen more creativity and more capable people in schools for the deaf than I have in public education. I would be very reluctant to duplicate some of the programs considered successful in public education in schools for the deaf. I don't think that we need to try to fit our television programs or our concepts around something that has been proven in public education. Certainly they can help; this should definitely be considered.

In summary, it would appear that the use of television as an environmental language tool would be very beneficial to the deaf. More effective use of TV in schools would make available new techniques and materials never before considered possible. It could turn the idle recreation time into meaningful experiences, create a learning environment in the living quarters of schools, and extend the curriculum to areas outside the classroom. The hearing handicapped could be served well by TV and creativity. I would like to call your attention the publication of the Regional Media Center for the Deaf in Knoxville, Tennessee, "Suggestions and Guidelines of Development of TV in Schools for the Deaf." I invite you to write to Southern Regional Media Center for a copy of this booklet which I am sure you will find very helpful. If you don't have a copy of "Designs for Educational TV" put out by the Educational Facilities Laboratory here in New York, I suggest that you pick up a copy. Educational Facilities Laboratory, Incorporated, 477 Madison Avenue, New York, New York 10022.

SUMMATION

Educational Television for Teaching the Handicapped held in August, 1968. It was sponsored by the New York State Education Department, SEIMC, and chaired by Sarah Adams, the Media Coordinator of Special Schools Services. Twenty-two participants, media specialist or librarian-superintendent teams representing 13 schools attended the three day conference.

Through his talk, "Born of Action", Richard Barnes from Lexington, Massachusetts, traced the methodology changes and trends which have occurred and are at work in the field of education.

Joseph Thom, Director of Library Services at Port Jefferson and one of his English teachers in "Port Jefferson's Production Center" portrayed through a narrated slide series the exciting response of students and faculty to the student-centered facility. The students are developing video tapes which are evaluated worthy of use by future students for study.

Peter Dirr, Utilization Manager of Channel 13-TV, through his talk, "The TV Set in the Classroom", introduces the background and varied valuable assistance the Educational TV Station offers teachers through membership. He mentioned in-service training, program guides, and consultant services.

Ira Perelle, representative of Chester Electronic Laboratories spoke on "Technology as it Applies" and clarified the meaning of dial access and installation. As he spoke of the variety of ways in which it could be utilized, some of the participants saw its application as a supplement to their present sound loop installations designed for classrooms for the deaf.

Jeanne Davis, Manager of Audiovisual Technology, New York Times, spoke from her experience as a classroom teacher and as Associate in Television in the Division of Educational Communication (New York Education Department). Her topic, "The In's and Out's of TV",dealt with the input and outcome of student of student participation as factors as important as, if not more, than the results. She showed slides of various aged students creating their own productions. In Mamaroneck, they run the entire operation taking turns being producer, sound manager, talent, etc. The principal there highly supports this for its therapeutic value for certain students. TV offers ample opportunity for discovery, creativity, and involvement. Students are very sophisticated in their critique of television. Local production has a part to play but so does the professional production.

William Humphrey in "Technical Price and Staff Considerations" as Consultant, Instructional TV and Media Facilities, N.Y.S. Education Department, outlined the technical price and staff considerations to be contemplated by any school anticipating venturing into television production.

E. Jack Goforth, representing Audio Visual Devices, Inc., spoke on the future of TV for special education. He explained the feasibility of captioning TV programs.

The representatives contributed information about their schools' activities. St. Mary's School for the Deaf played one of their video tapes. American School for the Deaf, West Hartford, Connecticut, told of their using split screen to portray finger spelling and the program at the sametime.

ETV INSTITUTE - AUGUST, 1968

EVALUATION BY PARTICIPANTS

Channel 13 information was most helpful and interesting.

One or two demonstrations in the use of multi-media.

Actual taping of a TV program for the group.

Knowledge of State Education Dept., video-tape library.

Demonstration of VTR.

Small group discussion.

Technical aspects.

TV in Education of Deaf.

Exchange of information between schools.

Demonstration of Equipment.

Questions and answer periods.

Humphrey's discussion of just what is involved in setting up a program.

Innovative uses of ETV in classrooms.

Mr. Barnes' most interesting presentation.

AREA OF ASSISTANCE

Dissemination of material. Send a list of AV materials that are available in all our schools.

Send more information on the Curriculum Media area.

Try to have a meeting of AV Coordinators at the NYS EDA Convention in October where we can share our findings in all areas of media, not just TV.

Need: More questions and answer periods, questions after each presentation, regional approach to ETV (several schools).

A media coordinator would be an invaluable asset in showing schools, teachers how to utilize materials on hand and how to improve, where materials can be obtained.

Coordinate activities from school to school for sharing; to avoid duplication of major project activities.

Attendance could be improved if held during the school year.

ETV INSTITUTE - AUGUST, 1968

TOPICS FOR FUTURE

Comprehensive list of media services for schools for the deaf.

Meetings of metropolitan New York City Schools for the Deaf.

Dissemination of ERIC information.

Limit to TV again, what areas are most effective for T.V.

Visitation to a school or schools to see equipment, etc., and talk to persons at the school.

Funding of ETV.

More on how to use the program in the classroom, flexibility of the media.

Visitation of faculties.

Creative experimentation with television in the classroom,

for pupils and teachers.

Aspects of installation and utilization.